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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,605	08/09/2007	Yoshihisa Warashina	46884-5504	2686
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EXAMINER				
STAHL, MICHAEL J				
ART UNIT		PAPER NUMBER		
2874				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/589,605

**Applicant(s)**

WARASHINA ET AL.

**Examiner**

MICHAEL STAHL

**Art Unit**

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 June 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SI/309)  
Paper No(s)/Mail Date 8/16/06 6/12/07
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-4, and 6-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Caracci et al. (US 6571033).

Claim 1: Caracci discloses an optical transmitting and receiving module comprising: a light transmitting substrate **92**, transmitting light of a first wavelength; a laser diode **26**, set on the light transmitting substrate and emitting light of a second wavelength that differs from the first wavelength; a photodiode **36**, mounted on a rear surface side of the light transmitting substrate surface on which the laser diode is disposed; a dielectric film filter **60**, reflecting light of the first wavelength and transmitting light of the second wavelength; and an optical input and output portion (optical fiber ferrule unlabeled in fig. 5), inputting light emitted from the laser diode and outputting light to the photodiode; the dielectric film filter being set in an inclined groove (bottom portion of **100**), formed at a predetermined inclination angle in the light transmitting substrate, so as to match optical paths between the photodiode and the optical input and output portion and match optical paths between the laser diode and the optical input and output portion. See fig. 5.

Claim 3: This is interpreted as a product-by-process claim, and is considered satisfied since the recited product is the same as the reference product (per MPEP 2113).

Claim 4: The photodiode **36** is positioned directly below a line connecting the laser diode **26** and the optical input and output portion as shown in fig. 5 which is a cross-sectional view.

Claim 6: Lenses **24** and **16** are disposed respectively between the dielectric film filter and the laser diode and between the dielectric film filter and the optical input and output portion (**16** is shown but not labeled in fig. 5, but is labeled in fig. 1; also note col. 5 lns. 23-31).

Claim 7: In a related embodiment (fig. 6), a converging lens **118** that converges light onto the photodiode is disposed on a top surface of the light transmitting surface.

Claim 8: This is regarded as a product-by-process claim. See above with regard to claim 3.

Claim 9: The optical input and output portion is a front end portion of an optical fiber **18** (not labeled in fig. 5, but see fig. 1).

Claim 10: An optical fiber is a form of optical waveguide. It is noted that a planar optical waveguide could be used instead of an optical fiber (col. 3 ln. 61 – col. 4 ln. 3; claim 7).

### ***Claim Rejections - 35 USC § 103***

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caracci et al. (cited above).

Claim 2: Caracci does not specifically disclose that the light transmitting substrate 92 is a silicon substrate. It is already well known in the art to make optical devices from silicon since silicon is transparent in the near-infrared wavelength range commonly used for optical communications, high quality silicon is abundant, and techniques for processing it are well developed. A person having ordinary skill in the art could have substituted silicon for the substrate material used in Caracci and the results would have been predictable. Accordingly, it would have been obvious to a skilled person to use silicon as the material of the light transmitting substrate in the Caracci apparatus.

Claim 5: Caracci does not specifically disclose a plurality of sets of the photodiode, the laser diode, and the dielectric film filter disposed in array form. Mere duplication of parts has been held to be obvious (MPEP 2144.04(VI)). In the instant case a skilled person could have extended the mounting structure 92 into the plane of fig. 5 and provided the additional parts 36, 26, and 60 and the results would have been predictable. A skilled person would have been motivated to make this change as it clearly provides additional signal processing capacity. Thus

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it would have been obvious to a person of ordinary skill in the art to dispose sets of 36/26/60 in array form as proposed above.

### *Conclusion*

The additional references listed on the attached PTO-892 are relevant to the subject matter of this application.

Inquiries about this letter may be directed to examiner Stahl at the number below. Inquiries of a general or clerical nature (e.g., a request for a missing form or paper, etc.) should be directed to the technical support staff supervisor at 571-272-1626. Official correspondence which is eligible for submission by facsimile and which pertains to this application may be faxed to 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Questions about the Private PAIR system should be directed to the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/mjs/

Mike Stahl  
2874  
571-272-2360

/Hemang Sanghavi/  
Primary Examiner, Art Unit 2874